OIPE JC68 3010
JAN 09 2004
PATENT & TRADEMARK OFFICE

01-12-04

PTO/SB/21 (05-03)
Approved for use through 04/30/2003. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/683,948
Filing Date	October 10, 2003
First Named Inventor	Didenko et al.
Art Unit	(TBA)
Examiner Name	(TBA)
Attorney Docket Number	04367.00019

Total Number of Pages in This Submission

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment / Response
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☒ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers *(for an Application)*
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) ____
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) *(please identify below)*:

  PTO/SB/08A form, 26 references
  Exp MI # EL941344760US,
  Return Receipt Post card

Remarks

Please charge any additional fees or credit overpayment to Deposit Account No. 19-0733. A duplicate copy of this sheet is enclosed.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm *or* Individual name	Banner & Witcoff, Ltd 10 S. Wacker Drive, Suite 3000 Chicago, IL 60606 Robert Resis (Reg. No. 32,168)
Signature	
Date	January 9, 2004

~~CERTIFICATE OF MAILING~~

~~I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.~~

~~Typed or printed name~~	——		
~~Signature~~		~~Date~~	——

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

CERTIFICATE OF MAILING
(PATENT)

Express Mail No. EL941344760US

Deposited January 9, 2004

I hereby certify that the attached correspondence, identified below, is being deposited with the United States Postal Service as "Express Mail Post Office to Addressee" under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patent, P.O. Box 1450, Alexandria, VA 22313-1450.

By: _____

Application of: Didenko et al.

Title: Controlled Chemical Aerosol Flow Synthesis of Nanometer-Sized Particles and Other Nanometer-Sized Products

Serial No. 10/683,948

X Transmittal Letter (in duplicate)

X Information Disclosure Statement

X PTO/SB/08A form

X 26 references

X Return Receipt Postcard

Attorney Docket No. 04367.00019

BANNER & WITCOFF, LTD.
Ten South Wacker Drive
Chicago, Illinois 60606
(312) 463-5000

OIPE JC68 33
JAN 09 2004
PATENT & TRADEMARK OFFICE

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. 04367.00019)

In the Application of:	)	
	)	
Didenko et al.	)	
	)	Group Art Unit: (TBA)
Serial No.: 10/683,948	)	
	)	Examiner: (TBA)
Filed: October 10, 2003	)	
	)	
For: Controlled Chemical Aerosol Flow Synthesis of Nanometer-Sized Particles and Other Nanometer-Sized Products	)	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 222313-1450

Dear Sir:

Pursuant to 37 C.F.R. §§1.97 and 1.98, applicants wish to make the following references of record in the above-identified application. These references may be material to the patentability of the presently pending claims. Copies of the references cited below are enclosed along with a completed PTO/SB/08a form.

NON-PATENT LITERATURE DOCUMENTS

1. Mdleleni, M. M.; Hyeon, T.; Suslick, K. S. Sonochemical synthesis of nanostructured molybdenum sulfide. *J. Am. Chem. Soc.* **120,** 6189-6190, (1998).

2. Alivisatos, A. P. Perspectives on the physical chemistry of semiconductor nanocrystals. *J. Phys. Chem.* **100**, 13226-13239 (1996).

Banner & Witcoff, Ltd
Ten South Wacker Drive
Suite 3000
Chicago, IL 60606
Telephone No.: (312) 463-5000

3. Eychmuller, A. Structure and photophysics of semiconductor nanocrystals. *J. Phys. Chem. B* **104,** 6514-6528 (2000).

4. Murray, C. B., Kagan, C. R.; Bawendi, M. G. Synthesis and characterization of monodisperse nanocrystals and close-packed nanocrystals assemblies. *Ann. Rev. Mater. Sci.* **30,** 545-610 (2000).

5. Green, M., O'Brien, P. O. Recent advances in the preparation of semiconductors as isolated nanometric particles: new routes to quantum dots. *Chem. Comm.* **11,** 2235-2241 (1999).

6. T. Trindadae, P. O'Brien, N. L. Pickett. Nanocrystalline semiconductors: synthesis, properties and perspectives. *Chem. Mater.* **13,** 3843-3858 (2001).

7. Grieve, K.; Mulvaney, P.; Grieser, F. Synthesis and electronic properties of semiconductor nanoparticles/quantum dots. *Current Opinion Coll. Interface Sci.* **5,** 168-172 (2000).

8. Colvin, V. L.; Schlamp, M. C.; Alivisatos, A. P. Light-emitting diodes made from cadmium selenide nanocrystals and a semiconducting polymer. *Nature* **370,** 354-357 (1994).

9. Bruchez, M., Jr. et al. Semiconductor nanocrystals as fluorescent biological labels. *Science* **281,** 2013-2016 (1998).

10. Chan, W. C. W.; Nie, S. Quantum dot bioconjugates for ultrasensitive nonisotopic detection. *Science* **281,** 2016-2018 (1998).

11. Huynh, W. U.; Dittmer, J. J.; Alivisatos, A. P. Hybrid nanorods-polymer solar cells. *Science* **295,** 2425-2427 (2002).

Banner & Witcoff, Ltd
Ten South Wacker Drive
Suite 3000
Chicago, IL 60606
Telephone No.: (312) 463-5000

12. Huynh, W. U. et al. Controlling the morphology of nanocrystals-polymer composites for solar cells. *Adv. Funct. Mater.* **13,** 73-79 (2003).

13. Klimov, V. I., et al. Optical gain and stimulated emission in nanocrystals quantum dots. *Science* **290,** 314-317 (2000).

14. Eisler, H-J. et al. Color-selective semiconductor nanocrystals laser. *Appl. Phys. Lett.* **80,** 4614-4616 (2002).

15. Thurston, T. R.; Wilcoxon, J. P. Photooxidation of organic chemicals catalysed by nanoscale MoS_2. *J. Phys. Chem. B.* **103,** 11-17 (1999).

16. Murray, C. B.; Norris, D. J.; Bawendi, M. G. Synthesis and characterization of nearly monodisperse CdE (E= S, Se, Te) semiconductor nanocrystallites. *J. Am. Chem. Soc.* **105,** 88706-88715 (1993).

17. Peng, Z. A.; Peng, X. Formation of high quality CdTe, CdSe, and CdS nanocrystals using CdO as precursor. *J. Am. Chem. Soc.* **123,** 183-184 (2001).

18. Gratzel, M. Photoelectrochemical cells. *Nature (London),* **414,** 338-344 (2001).

19. Larson, D. et al. Water-soluble quantum dots for multiphoton fluorescence imaging in vivo. *Science* **300,** 1434-1436 (2003).

20. Manna, L.; Sher, E. C.; A. P. Alivisatos. Synthesis of soluble and processable rod-, arrow-, teardrop-, and tetrapod-shaped CdSe nanocrystals. *J. Am. Chem. Soc.* **122,** 12700-12706 (2000).

Banner & Witcoff, Ltd
Ten South Wacker Drive
Suite 3000
Chicago, IL 60606
Telephone No.: (312) 463-5000

21. Peng, Z. A.; Peng, X. Nearly monodisperse and shape-controlledCdSe nanocrystals via alternative routes: nucleation and growth. *J. Am. Chem. Soc.* **124,** 3343-3353 (2002).

22. Okuyama, K. et al. Preparation of ZnS and CdS fine particles with different particle sizes by a spray pyrolysis method. *J. Mater. Sci.* **32**, 1229-1237 (1997).

23. Okuyama, K.; Lenggoro, W. Preparation of nanoparticles via spray route. *Chem. Eng. Sci.* **58**, 537-547 (2003).

24. Striolo, A. et al. Molecular weight, osmotic second viral coefficient, and extinction coefficient of colloidal CdSe nanocrystals. *J. Phys. Chem. B*, **106,** 5500-5505 (2002).

25. Qu, L.; Peng, X. Control of photoluminescence properties of CdSe nanocrystals in growth. *J. Am. Chem. Soc.* **124,** 2049-2055 (2002).

26. American Chemical Society 34th Great Lakes Regional Meeting; Minneapolis, MN, Item No. 301, Tuesday, June 4, 2002, Nolte Room at 9:20-9:45 a.m. Applications of Ultrasound to Materials Chemistry. Kenneth S. Suslick, Yuri T. Didenko, Abstract (1 page); Slides (10 pages).

The present Disclosure Statement is being submitted in compliance with 37 C.F.R. 1.56 as an Examiner might consider the cited documents important in deciding whether to allow the application to issue as a patent, but the citation of such documents is not to be construed as an admission that such documents are necessarily relevant or prior art. No representation is intended that the cited documents represent the results of a complete search, and it is anticipated that the Examiner in the normal course of examination, will make an independent search and will determine the best prior art and in the course of such search, will review for relevance the documents cited on the attached form even if not initialed.

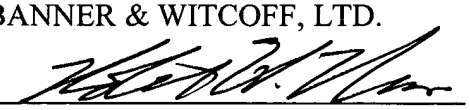
Banner & Witcoff, Ltd
Ten South Wacker Drive
Suite 3000
Chicago, IL 60606
Telephone No.: (312) 463-5000

The accompanying Information Disclosure Statement is being filed within three months of the U.S. filing date or before the mailing date of a first Office Action on the merits. No certification or fee is required.

Early and favorable consideration is earnestly solicited.

Respectfully submitted,
BANNER & WITCOFF, LTD.

Dated: January 9, 2004

By: 

Robert H. Resis
Reg. No. 32,168
Direct Dial: (312) 463-5405

Banner & Witcoff, Ltd
Ten South Wacker Drive
Suite 3000
Chicago, IL 60606
Telephone No.: (312) 463-5000

OIPE JC68 3C
JAN 09 2004
PATENT & TRADEMARK OFFICE

PTO/SB/08b(05-03)
Approved for use through 04/30/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	10/683,948
Filing Date	October 10, 2003
First Named Inventor	Didenko er al.
Group Art Unit	(TBA)
Examiner Name	(TBA)
Attorney Docket Number	04367.00019

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		Mdleleni, M. M.; Hyeon, T.; Suslick, K. S. Sonochemical synthesis of nanostructured molybdenum sulfide. *J. Am. Chem. Soc.* **120,** 6189-6190, (1998).	
		Alivisatos, A. P. Perspectives on the physical chemistry of semiconductor nanocrystals. *J. Phys. Chem.* **100**, 13226-13239 (1996).	
		Eychmuller, A. Structure and photophysics of semiconductor nanocrystals. *J. Phys. Chem. B* **104,** 6514-6528 (2000).	
		Murray, C. B., Kagan, C. R.; Bawendi, M. G. Synthesis and characterization of monodisperse nanocrystals and close-packed nanocrystals assemblies. *Ann. Rev. Mater. Sci.* **30**, 545-610 (2000).	
		Green, M., O'Brien, P. O. Recent advances in the preparation of semiconductors as isolated nanometric particles: new routes to quantum dots. *Chem. Comm.* **11**, 2235-2241 (1999).	
		T. Trindadae, P. O'Brien, N. L. Pickett. Nanocrystalline semiconductors: synthesis, properties and perspectives. *Chem. Mater.* **13,** 3843-3858 (2001).	
		Grieve, K.; Mulvaney, P.; Grieser, F. Synthesis and electronic properties of semiconductor nanoparticles/quantum dots. *Current Opinion Coll. Interface Sci.* **5**, 168-172 (2000).	
		Colvin, V. L.; Schlamp, M. C.; Alivisatos, A. P. Light-emitting diodes made from cadmium selenide nanocrystals and a semiconducting polymer. *Nature* **370,** 354-357 (1994).	
		Bruchez, M., Jr. et al. Semiconductor nanocrystals as fluorescent biological labels. *Science* **281,** 2013-2016 (1998).	
		Chan, W. C. W.; Nie, S. Quantum dot bioconjugates for ultrasensitive nonisotopic detection. *Science* **281,** 2016-2018 (1998).	
		Huynh, W. U.; Dittmer, J. J.; Alivisatos, A. P. Hybrid nanorods-polymer solar cells. *Science* **295,** 2425-2427 (2002).	
		Huynh, W. U. et al. Controlling the morphology of nanocrystals-polymer composites for solar cells. *Adv. Funct. Mater.* **13,** 73-79 (2003).	
		Klimov, V. I., et al. Optical gain and stimulated emission in nanocrystals quantum dots. *Science* **290,** 314-317 (2000).	
		Eisler, H-J. et al. Color-selective semiconductor nanocrystals laser. *Appl. Phys. Lett.* **80,** 4614-4616 (2002).	
		Thurston, T. R.; Wilcoxon, J. P. Photooxidation of organic chemicals catalysed by nanoscale MoS_2. *J. Phys. Chem. B.* **103,** 11-17 (1999).	
		Murray, C. B.; Norris, D. J.; Bawendi, M. G. Synthesis and characterization of nearly monodisperse CdE (E= S, Se, Te) semiconductor nanocrystallites. *J. Am. Chem. Soc.* **105,** 88706-88715 (1993).	
		Peng, Z. A.; Peng, X. Formation of high quality CdTe, CdSe, and CdS nanocrystals using CdO as precursor. *J. Am. Chem. Soc.* **123,** 183-184 (2001).	

JAN 09 2004
PATENT & TRADEMARK OFFICE

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 2

Complete if Known	
Application Number	10/683,948
Filing Date	October 10, 2003
First Named Inventor	Didenko er al.
Group Art Unit	(TBA)
Examiner Name	(TBA)
Attorney Docket Number	04367.00019

		Gratzel, M. Photoelectrochemical cells. *Nature (London),* **414,** 338-344 (2001).	
		Larson, D. et al. Water-soluble quantum dots for multiphoton fluorescence imaging in vivo. *Science* **300,** 1434-1436 (2003).	
		Manna, L.; Sher, E. C.; A. P. Alivisatos. Synthesis of soluble and processable rod-, arrow-, teardrop-, and tetrapod-shaped CdSe nanocrystals. *J. Am. Chem. Soc.* **122,** 12700-12706 (2000).	
		Peng, Z. A.; Peng, X. Nearly monodisperse and shape-controlledCdSe nanocrystals via alternative routes: nucleation and growth. *J. Am. Chem. Soc.* **124,** 3343-3353 (2002).	
		Okuyama, K. et al. Preparation of ZnS and CdS fine particles with different particle sizes by a spray pyrolysis method. *J. Mater. Sci.* **32,** 1229-1237 (1997).	
		Okuyama, K.; Lenggoro, W. Preparation of nanoparticles via spray route. *Chem. Eng. Sci.* **58,** 537-547 (2003).	
		Striolo, A. et al. Molecular weight, osmotic second viral coefficient, and extinction coefficient of colloidal CdSe nanocrystals. *J. Phys. Chem. B,* **106,** 5500-5505 (2002).	
		Qu, L.; Peng, X. Control of photoluminescence properties of CdSe nanocrystals in growth. *J. Am. Chem. Soc.* **124,** 2049-2055 (2002).	
		American Chemical Society 34th Great Lakes Regional Meeting; Minneapolis, MN, Item No. 301, Tuesday, June 4, 2002, Nolte Room at 9:20-9:45 a.m. Applications of Ultrasound to Materials Chemistry. Kenneth S. Suslick, Yuri T. Didenko, Abstract (1 page); Slides (10 pages).	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.